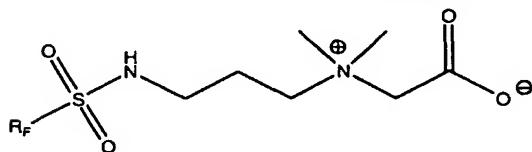


**CLAIMS**

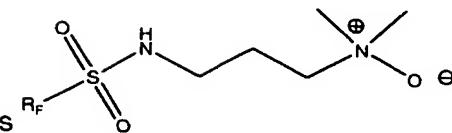
What is claimed is:

1. An Aqueous Film Forming Foam formulation comprising  $R_F-Q_s$ , wherein:  
 $R_F$  has a greater affinity for a first part of a system having at least two parts than  $Q_s$ ;  
5       $Q_s$  has a greater affinity for a second part of the system than  $R_F$ ; and  
 $R_F$  comprises at least two  $-CF_3$  groups and at least two hydrogens.
2. The formulation of claim 1 wherein  $R_F$  is hydrophobic relative to  $Q_s$ .
3. The formulation of claim 1 wherein  $Q_s$  is hydrophilic relative to  $R_F$ .
4. The formulation of claim 1 wherein  $R_F$  is hydrophobic and  $Q_s$  is hydrophilic.
- 10      5. The formulation of claim 1 wherein  $R_F$  comprises at least one  $-CH_2-$  group.
6. The formulation of claim 1 wherein  $R_F$  comprises at least one cyclic group.
7. The formulation of claim 6 wherein the cyclic group comprises an aromatic group.
- 15      8. The formulation of claim 1 wherein  $R_F$  comprises at least one  $(CF_3)_2CF$ - group.
9. The formulation of claim 1 wherein  $R_F$  comprises at least three  $-CF_3$  groups.
10. The formulation of claim 1 wherein  $R_F$  comprises at least two  $(CF_3)_2CF$ - groups.
- 20      11. The formulation of claim 1 wherein  $R_F$  comprises at least four carbons and one of the four carbons comprises a  $-CH_2-$  group.

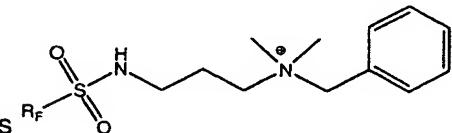
12. The formulation of claim 1 wherein  $R_F-Q_s$  is



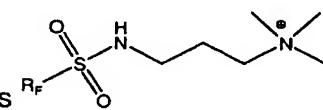
13. The formulation of claim 1 wherein  $R_F-Q_s$  is



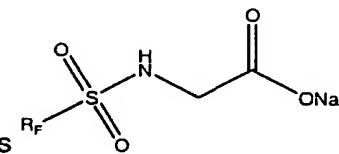
14. The formulation of claim 1 wherein  $R_F-Q_s$  is



15. The formulation of claim 1 wherein  $R_F-Q_s$  is

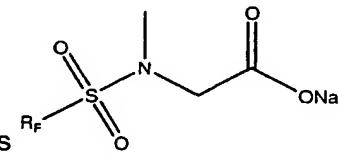


16. The formulation of claim 1 wherein  $R_F-Q_s$  is

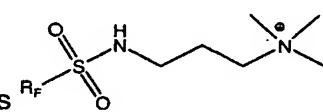


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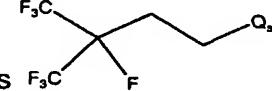
17. The formulation of claim 1 wherein  $R_F-Q_s$  is



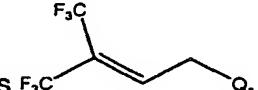
18. The formulation of claim 1 wherein  $R_F-Q_s$  is



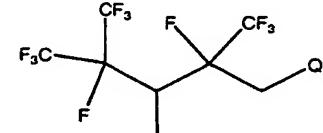
19. The formulation of claim 1 wherein  $R_F-Q_s$  is



20. The formulation of claim 1 wherein  $R_F-Q_s$  is

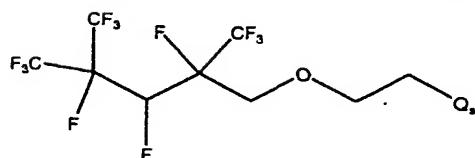


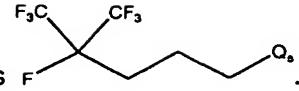
21. The formulation of claim 1 wherein  $R_F-Q_s$  is

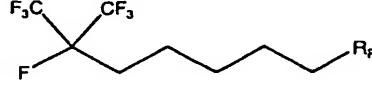


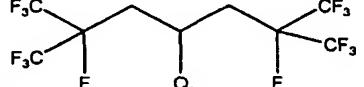
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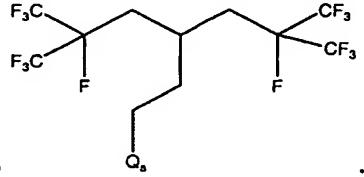
22. The formulation of claim 1 wherein  $R_F-Q_s$  is

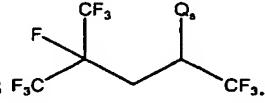


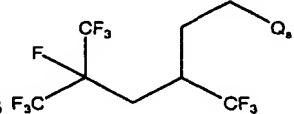
23. The formulation of claim 1 wherein  $R_F-Q_S$  is .

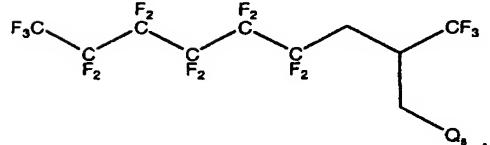
24. The formulation of claim 1 wherein  $R_F-Q_S$  is .

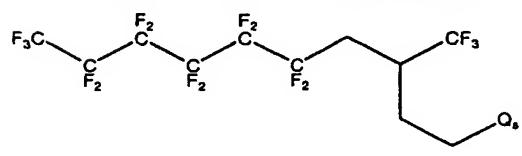
25. The formulation of claim 1 wherein  $R_F-Q_S$  is .

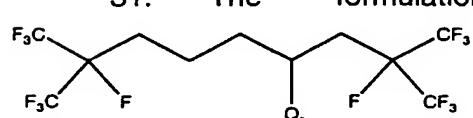
26. The formulation of claim 1 wherein  $R_F-Q_S$  is .

5 27. The formulation of claim 1 wherein  $R_F-Q_S$  is .

28. The formulation of claim 1 wherein  $R_F-Q_S$  is .

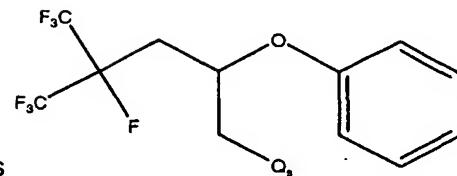
29. The formulation of claim 1 wherein  $R_F-Q_S$  is .

30. The formulation of claim 1 wherein  $R_F-Q_S$  is .

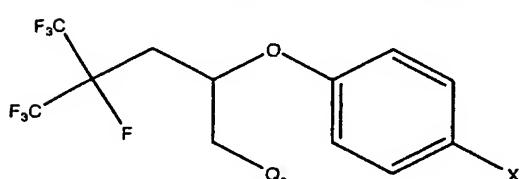
10 31. The formulation of claim 1 wherein  $R_F-Q_S$  is .

32. The formulation of claim 1 wherein  $R_F-Q_s$  is

33. The formulation of claim 1 wherein  $R_F-Q_s$  is



34. The formulation of claim 1 wherein  $R_F-Q_s$  is



5

35. A process for providing an Aqueous Film Forming Foam formulation to a substrate, the Aqueous Film Forming Foam formulation comprising  $R_F-Q_s$ , wherein:  
 10  $R_F$  has a greater affinity for a first part of a system having at least two parts than  $Q_s$ ;  
 $Q_s$  has a greater affinity for a second part of the system than  $R_F$ ; and  
 $R_F$  comprises at least two  $-CF_3$  groups and at least two hydrogens.

36. The process of claim 35 wherein  $R_F$  is hydrophobic relative to  $Q_s$ .

37. The process of claim 35 wherein  $Q_s$  is hydrophilic relative to  $R_F$ .

38. The process of claim 35 wherein  $R_F$  is hydrophobic and  $Q_s$  is hydrophilic.

39. The process of claim 35 wherein the substrate comprises a liquid.

15 40. The process of claim 35 wherein the substrate is a part of the system.

41. The process of claim 35 wherein  $R_F$  comprises at least one  $-CH_2-$  group.

42. The process of claim 35 wherein  $R_F$  comprises at least one cyclic group.

43. The process of claim 42 wherein the cyclic group comprises an aromatic group.

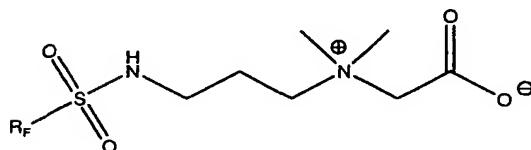
20 44. The process of claim 35 wherein  $R_F$  comprises at least one  $(CF_3)_2CF-$  group.

45. The process of claim 35 wherein  $R_F$  comprises at least three  $-CF_3$  groups.

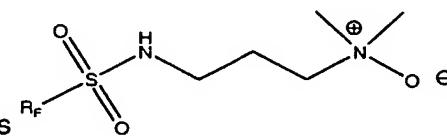
46. The process of claim 35 wherein  $R_F$  comprises at least two  $(CF_3)_2CF-$  groups.

47. The process of claim 35 wherein  $R_F$  comprises at least four carbons and one of the four carbons comprises a  $-CH_2-$  group.

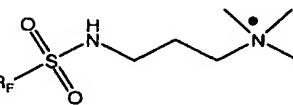
5 48. The process of claim 35 wherein  $R_F-Q_s$  is



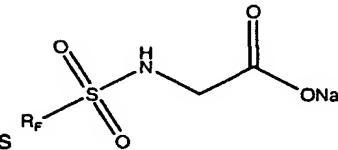
49. The process of claim 35 wherein  $R_F-Q_s$  is



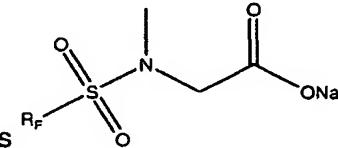
50. The process of claim 35 wherein  $R_F-Q_s$  is



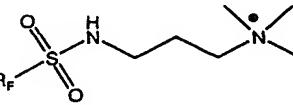
51. The process of claim 35 wherein  $R_F-Q_s$  is



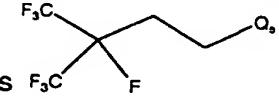
10 52. The process of claim 35 wherein  $R_F-Q_s$  is



53. The process of claim 35 wherein  $R_F-Q_s$  is

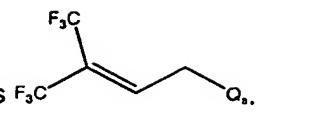


54. The process of claim 35 wherein  $R_F-Q_s$  is

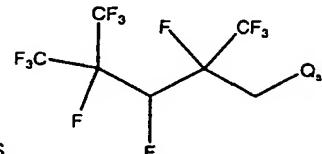


55. The process of claim 35 wherein  $R_F-Q_s$  is

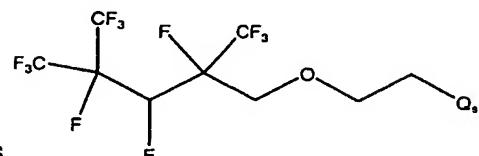
56. The process of claim 35 wherein  $R_F-Q_s$  is  $\text{F}_3\text{C}-\text{C}(\text{F})=\text{C}(\text{F})-\text{C}(\text{F})-\text{C}(\text{F})-\text{O}-\text{Q}_s$ .



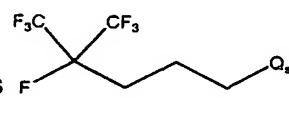
57. The process of claim 35 wherein  $R_F-Q_s$  is



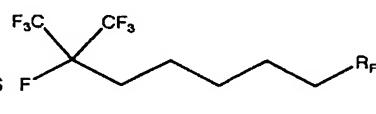
58. The process of claim 35 wherein  $R_F-Q_s$  is



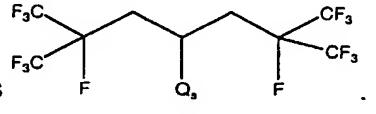
59. The process of claim 35 wherein  $R_F-Q_s$  is  $\text{F}-\text{C}(\text{F})-\text{C}(\text{F})-\text{C}(\text{F})-\text{C}(\text{F})-\text{C}(\text{F})-\text{O}-\text{Q}_s$ .



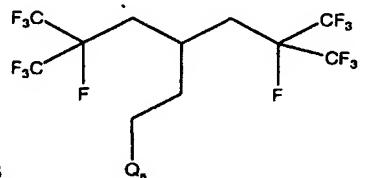
5 60. The process of claim 35 wherein  $R_F-Q_s$  is  $\text{F}-\text{C}(\text{F})-\text{C}(\text{F})-\text{C}(\text{F})-\text{C}(\text{F})-\text{C}(\text{F})-\text{C}(\text{F})-\text{C}(\text{F})-\text{O}-\text{R}_F$ .



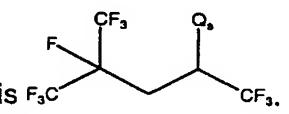
61. The process of claim 35 wherein  $R_F-Q_s$  is



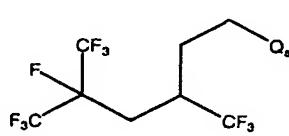
62. The process of claim 35 wherein  $R_F-Q_s$  is



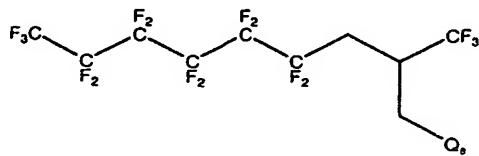
63. The process of claim 35 wherein  $R_F - Q_s$  is  $\text{F}_3\text{C}-\text{C}(\text{F})-\text{C}(\text{F})-\text{C}(\text{F})-\text{O}-\text{Q}_s-\text{C}(\text{F})-\text{C}(\text{F})-\text{C}(\text{F})-\text{O}-\text{Q}_s$ .



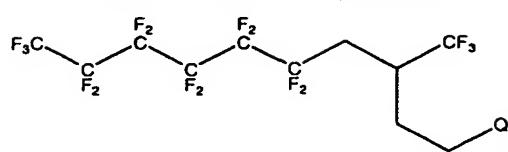
64. The process of claim 35 wherein  $R_F-Q_s$  is  $\text{F}_3\text{C}-\text{C}(\text{F})-\text{C}(\text{F})-\text{C}(\text{F})-\text{C}(\text{F})-\text{C}(\text{F})-\text{C}(\text{F})-\text{O}-\text{Q}_s-\text{C}(\text{F})-\text{C}(\text{F})-\text{C}(\text{F})-\text{O}-\text{Q}_s$ .



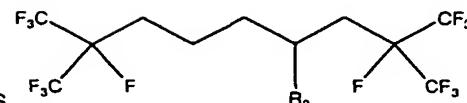
10 65. The process of claim 35 wherein  $R_F-Q_s$  is



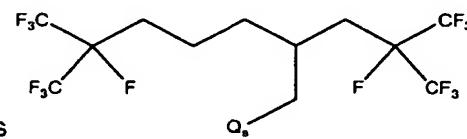
66. The process of claim 35 wherein  $R_F-Q_s$  is



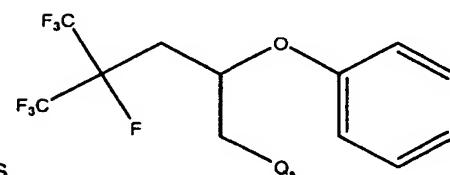
67. The process of claim 35 wherein  $R_F-Q_s$  is



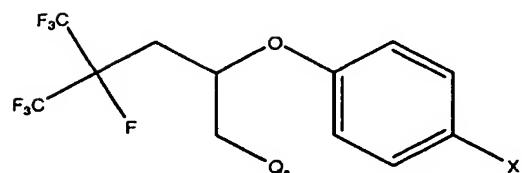
68. The process of claim 35 wherein  $R_F-Q_s$  is



5 69. The process of claim 35 wherein  $R_F-Q_s$  is



70. The process of claim 35 wherein  $R_F-Q_s$  is



71. A foam stabilizer comprising  $R_F-Q_{FS}$ , wherein  $R_F$  is hydrophobic relative to  $Q_{FS}$ ,  $R_F$  comprising at least two  $-CF_3$  groups and at least two hydrogens.

10 72. The stabilizer of claim 71 wherein  $R_F$  comprises at least one  $-CH_2-$  group.

73. The stabilizer of claim 71 wherein  $R_F$  comprises at least one cyclic group.

74. The stabilizer of claim 73 wherein the cyclic group comprises an aromatic group.

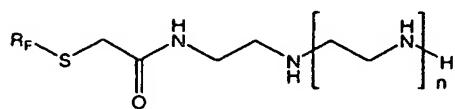
75. The stabilizer of claim 71 wherein  $R_F$  comprises at least one  $(CF_3)_2CF-$  group.

15 76. The stabilizer of claim 71 wherein  $R_F$  comprises at least three  $-CF_3$  groups.

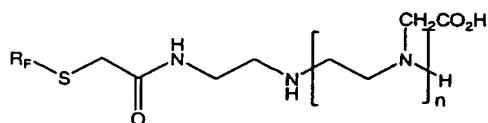
77. The stabilizer of claim 71 wherein  $R_F$  comprises at least two  $(CF_3)_2CF-$  groups.

78. The stabilizer of claim 71 wherein  $R_F$  comprises at least four carbons and one of the four carbons comprises a  $-CH_2-$  group.

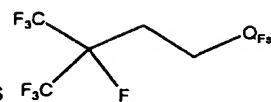
79. The stabilizer of claim 71 wherein  $R_F-Q_{FS}$  is



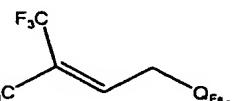
5 80. The stabilizer of claim 71 wherein  $R_F-Q_{FS}$  is



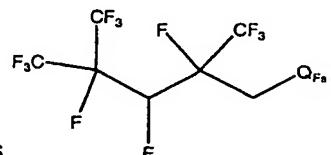
81. The stabilizer of claim 71 wherein  $R_F-Q_{FS}$  is



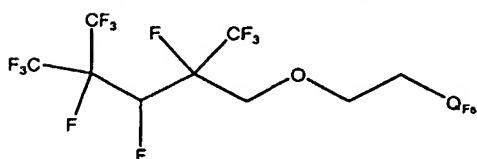
82. The stabilizer of claim 71 wherein  $R_F-Q_{FS}$  is



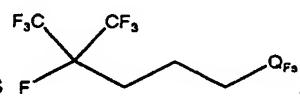
83. The stabilizer of claim 71 wherein  $R_F-Q_{FS}$  is



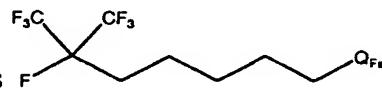
10 84. The stabilizer of claim 71 wherein  $R_F-Q_{FS}$  is



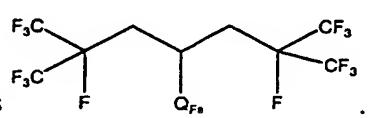
85. The stabilizer of claim 71 wherein  $R_F-Q_{FS}$  is

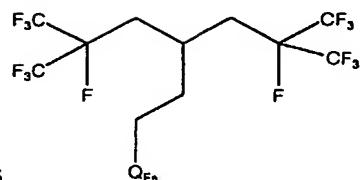


86. The stabilizer of claim 71 wherein  $R_F-Q_{FS}$  is

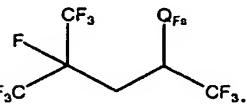


87. The stabilizer of claim 71 wherein  $R_F-Q_{FS}$  is

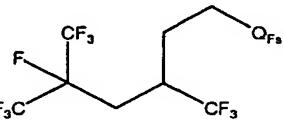




88. The stabilizer of claim 71 wherein  $R_F-Q_{FS}$  is

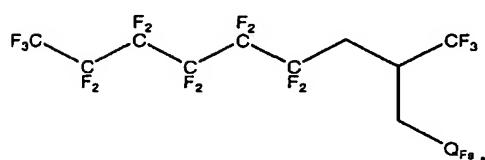


89. The stabilizer of claim 71 wherein  $R_F-Q_{FS}$  is  $F_3C-Q_{FS}-CF_3$ .



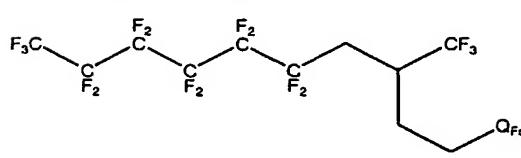
90. The stabilizer of claim 71 wherein  $R_F-Q_{FS}$  is  $F_3C-Q_{FS}-CF_3$ .

91. The stabilizer of claim 71 wherein  $R_F-Q_{FS}$  is

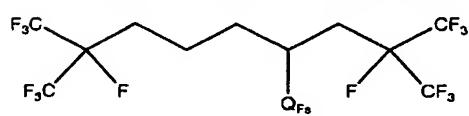


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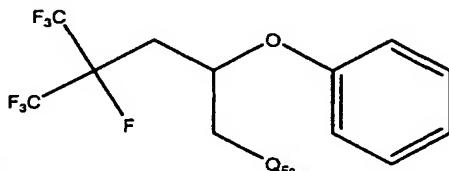
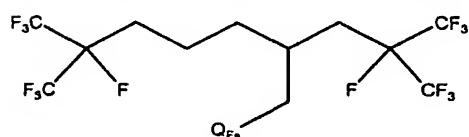
92. The stabilizer of claim 71 wherein  $R_F-Q_{FS}$  is



93. The stabilizer of claim 71 wherein  $R_F-Q_{FS}$  is



10 94. The stabilizer of claim 71 wherein  $R_F-Q_{FS}$  is



95. The stabilizer of claim 71 wherein  $R_F-Q_{FS}$  is

96. The stabilizer of claim 71 wherein  $R_F-Q_{FS}$  is

